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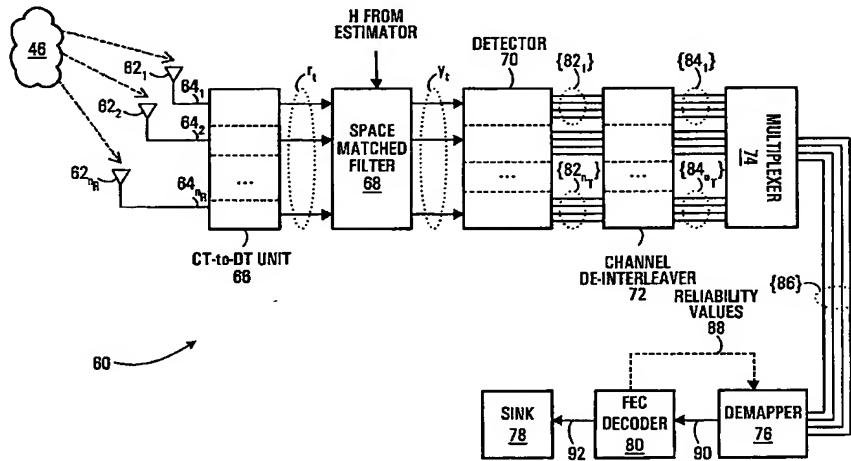
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(54) Title: SYSTEM AND METHOD FOR DATA COMMUNICATION OVER MULTI-INPUT, MULTI-OUTPUT CHANNELS



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(57) Abstract: System and method for estimating data transmitted by a plurality of transmit elements across a communications channel. The system comprises a plurality of receive interfaces, each operative to receive a signal via the channel and output a respective sequence of received data elements. The system also comprises a space matched filter connected to the plurality of receive interfaces and operative to (i) assemble the received data elements into sets of received data elements, each the set of received data elements including at least one received data element from each sequence of received data elements; and (ii) jointly process each set of received data elements with each of a plurality of channel data elements to produce a corresponding plurality of filtered data elements, each filtered data element being associated with one of the transmit elements, each channel data element being representative of a portion of the channel between an associated one of the transmit elements and the plurality of receive interfaces. Finally, the system comprises a detector connected to the space matched filter and operative to process each filtered data element to produce a corresponding decision data set therefor.

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